

Tweeting it off: characteristics of adults who tweet about a weight loss attempt

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ABSTRACT

Objective The purpose of this study was to describe adults who use Twitter during a weight loss attempt and to compare the positive and negative social influences they experience from their offline friends, online friends, and family members.

Materials and methods Participants (N=100, 80% female, mean age=37.65, SD=8.42) were recruited from Twitter. They completed a brief survey about their experiences discussing their weight loss attempt with their online and offline friends and provided responses to open-ended questions on the benefits and drawbacks of discussing weight on Twitter, Facebook, and weight-specific social networks.

Results Participants rated their connections on Twitter and weight loss-specific social networks to be significantly greater sources of positive social influence for their weight loss ($F(3)=3.47$; $p<0.001$) and significantly lesser sources of negative social influence ($F(3)=40.39$ and $F(3)=33.68$ (both $p<0.001$)) than their offline friends, family, and Facebook friends. Greater positive social influence from Twitter and Facebook friends was associated with greater weight loss in participants' most recent weight loss attempt ($r=0.30$, $r=0.32$; $p<0.01$). The most commonly reported benefits of tweeting about weight loss include social support, information, and accountability. The most common drawbacks reported are that interactions were too brief and lacked personal connection.

Discussion People who discuss their weight loss on Twitter report more social support and less negativity from their Twitter friends than their Facebook friends and in-person relationships.

Conclusions Online social networks should be explored as a tool for connecting patients who lack weight loss social support from their in-person relationships.

Obesity appears to be shared in social networks,^{1,2} either via processes involving the social reinforcement of obesity-related behaviors¹ via the tendency for similar people to cluster together, or some combination.³ This would have implications for behavior change, since newly adopted health behaviors may not be socially reinforced, and may even be punished within a social network that heavily reinforces obesity-related behaviors. Although social support for weight loss behaviors from family and friends is a predictor of weight loss in lifestyle interventions,⁴⁻⁶ participants often report very low levels of weight loss-related social support from family and friends.⁶ Exposure to social support for healthy behaviors may be the key to long lasting

weight loss, but changing the social fabric of one's life may be difficult.

Recent data show that people with health conditions are turning to online social networks to build social ties with others who have similar health conditions. The 2011 Pew Internet Survey found that 34% of US adult internet users have read a commentary or experience about health or medical issues online,⁷ and that a quarter of internet users with a chronic health condition have looked for others with their condition on the internet.⁸ In 2012, this emerging trend was coined 'peer-to-peer healthcare.'⁸ Online social networking is a low-cost approach to connecting individuals who have similar health issues; these networks have the potential to change behavior via social processes and distribution of evidence-based content.⁹

Online social networks for weight loss include both content-focused communities on weight-related websites and general social networking platforms such as Twitter and Facebook. In a study of users of the weight loss website, Sparkpeople, 60% agreed that their connections on the online social network were more helpful to their weight loss attempt than their family and friends.¹⁰ Participants reported that they received encouragement, motivation, information, shared experiences, testimonies, recognition for success, accountability, friendly competition, and humor from the online social network. They reported convenience, anonymity, and non-judgmental interactions as desirable characteristics unique to the online social network. Other studies of online weight loss programs found that online social network participation predicted weight loss,¹¹⁻¹⁴ and that weight loss was positively related to both the user's number of 'friends' and the weight loss achieved by these 'friends'.¹⁵

The present mixed-methods study aims to describe adults who use the online social network Twitter to discuss a current weight loss attempt, how their Twitter friends compare with their Facebook friends, their family and in-person friends in terms of positive and negative social influence, whether positive and negative social influence from these relationships predicts weight lost in the most recent attempt, and the benefits and drawbacks of discussing weight loss in an online social network. We hypothesize that social ties on Twitter will be greater purveyors of positive social influence and less purveyors of negative social influence than in-person social ties. Findings will help us understand the experience of people who discuss their weight loss attempt online.



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METHODS

Procedures

Participants were recruited on Twitter via tweets. Recruitment tweets asked, 'Do you tweet about your weight loss journey? Complete a brief survey' and included a link to a brief online survey. The recruitment tweet was tweeted 58 times by two study investigators (@DrSherryPagoto (SLP) and @300lbsandrunnin (ME)) over 4 weeks in August 2012 and 4 weeks in July 2013. Tweets appeared in the streams of the two investigators' 11 000 combined followers but were also publicly viewable. The investigators requested that followers 'retweet' or pass the tweet along to their followers, thus non-followers were exposed to the study advertisements as well, although we did not quantify to what extent. Participants were required to be 18 years or older to participate. No other exclusion criteria were employed. Participants completed a brief anonymous survey online using REDCap.¹⁶ Participants were not compensated. The study was approved by the University of Massachusetts Medical School human subjects review board.

Measures

Demographic variables and social media usage

Participants were asked to report their gender, age, weight and height, current and goal weights, how much weight they have lost so far in their current weight loss attempt, their use of 18 social media websites, and their reasons for using Twitter and Facebook.

Positive and negative social influence

Participants were asked questions regarding positive and negative social influence for five relationship categories: Twitter friends, Facebook friends, online weight loss social network friends (eg, Sparkpeople, Weight Watchers), in-person friends, and family. The following definition of 'in-person' friends was given: 'any friends that you interact with in person, meaning you see them and spend time with them.' All questions used 5-point Likert scales with responses ranging from 'very much disagree' to 'very much agree.'

Single-item questions were used to assess five different aspects of positive social support (ie, comfort, helpfulness, supportive, informative, and fun) in regards to people in each of the five relationship categories. Items included: 'I feel comfortable talking about weight loss, diet, and exercise with ___,' 'I get support from ___ about my weight loss, diet, and/or exercise,' 'I get useful information from ___ about my weight loss, diet, and/or exercise,' 'In general, I find my ___ to be very helpful to me as I try to lose weight,' and 'Talking about weight loss, exercise, and diet with ___ is fun.' Participants were given two negative social influence items to rate people in each of the five relationship categories: 'My ___ tend to be judgmental about my weight,' and 'I have felt embarrassed about my weight when it comes to my ___.' Each item was scored on 5-point Likert scale from 1 (very much disagree) to 5 (very much agree). A total score was created for the positive social influence items (Cronbach's α for each relationship category ranged from 0.82 to 0.88). Cronbach's α was low to medium sized (0.18–0.59) for the two negative social influence items, suggesting that these items may measure disparate aspects of negative social influence; thus, they were analyzed separately.

Benefits and drawbacks to discussing weight on Twitter and Facebook

In open-ended questions, participants were asked to describe what they like most and least about discussing their weight loss

attempt on Twitter, Facebook, and specific online weight loss social networks.

Analytic plan

χ^2 analyses were used to compare usage characteristics for Twitter and Facebook. Within-subject analyses of variance were used to compare Twitter with three relationship categories (Facebook friends, family, in-person friends) on the composite score for positive social influence and the two negative social influence items. Separate models were used to compare online weight loss social networks with each of the four relationship categories in the subsample who engaged in such online networks. Body mass index was a covariate. Because both the negative social influence questions had to do with weight bias (ie, feeling embarrassed or judged), only overweight and obese people were included in the analyses for those variables. Simple comparisons were then performed comparing Twitter friends with each category and online weight loss social network friends with each category using paired-samples t tests. Pearson r correlations were used to examine the association between both positive and negative social influence and weight loss in current attempt.

Responses to open-ended questions about barriers and facilitators to online discussions of weight loss were analyzed using a directed content analysis approach.¹⁷ Thematic analyses were used to characterize the open-ended questions on what participants liked the most (ie, benefits) and least (ie, drawbacks) about discussing their weight loss attempt on Twitter, Facebook, and online weight loss social networks separately, since we hypothesized that benefits and drawbacks might be importantly different across these three platforms.

All responses were reviewed by pairs of coders (SP, ME, MZ). Raters first worked independently to identify the major themes represented in each of the six domains (ie, benefits and drawbacks of each Twitter, Facebook, and online weight loss networks). A broad set of themes emerged for each of the six domains. Themes were then discussed among pairs and refined using a consensus process, and coding instructions were developed to define each of the nine identified themes for Twitter benefits, seven themes for Twitter drawbacks, eight themes for Facebook benefits, seven themes for Facebook drawbacks, four themes for online weight loss social network benefits, and five themes for online weight loss social network drawbacks. Themes were designed to be mutually exclusive (eg, each participant statement about Twitter benefits was coded as only one of the nine themes). When multiple themes were reflected in a single statement, raters were instructed to code each theme. The two raters then independently coded the responses according to theme. Finally, paired raters met to compare their coded responses; discrepancies were discussed with the team to achieve theme consensus.

RESULTS

Inter-rater reliability

Rater pairs demonstrated good inter-rater reliability: mean percent agreement all domains=90.2%; Twitter benefits percent agreement=82.4%, $\kappa=0.78$; Twitter drawbacks percent agreement=97.6%, $\kappa=0.97$; Facebook benefits percent agreement=94.4%, $\kappa=0.92$; Facebook drawbacks percent agreement=77.8%, $\kappa=0.74$; online weight loss network benefits percent agreement=97.5%, $\kappa=0.96$; online weight loss networks drawbacks percent agreement=91.6%, $\kappa=0.80$.

Participant characteristics

Of 157 users who started the survey, 64% (N=100) completed the survey and make up our analytic sample. Participants were largely female (80%) with a mean age of 37.65 years (SD=8.42; range=21–58 years). The mean reported body mass index was 32.0 kg/m² (SD=8.70); 23% were normal weight, 24% were overweight, and 53% were obese. The mean reported weight loss from the current weight loss attempt was 41.22 lb or 18 kg (SD=40.58; median=28 lb or 12 kg; range=0–200 lb or 0–90 kg). The mean weight loss goal was 43.72 lb or 19 kg (SD=43.33; median=28 lb or 12 kg; range=13–204 lb or 5–92 kg). Participants reported an average number of 2.54 online social network accounts (SD=2.19). Participants' Facebook and Twitter usage and characteristics are shown in [table 1](#). Participants were significantly more likely to use Facebook to connect with family (p=0.02), and significantly more likely to use Twitter to make new friends (p=0.002).

Positive social influence

Positive social influence differed by relationship category (F(3)=3.47, p=0.01). Participants reported higher positive social influence for Twitter friends (M=22.14, SD=3.12) versus Facebook friends (M=15.31, SD=5.17; t(87)=11.22, p<0.001), family (M=15.97, SD=5.15; t(97)=9.88, p<0.001) and in-person friends (M=16.80, SD=4.51; t(98)=9.41, p<0.001). Among participants who reported use of online social networks specific to weight loss (N=52), positive social influence did not differ by relationship category (F(4)=1.62, p=0.17).

Negative social influence

Both negative social influence items differed by relationship category (feeling embarrassed, F(3)=40.39, p<0.001; judgmental, F(3)=33.68, p<0.001). Overweight and obese participants (n=67) reported feeling less embarrassed about their weight when it came to their Twitter friends (M=2.49; SD=1.28) relative to Facebook friends (M=3.44, SD=1.23; t(67)=5.70, p<0.001), family (M=4.01, SD=1.24; t(76)=8.45, p<0.001)

and in-person friends (M=4.04, SD=1.05; t(76)=9.04, p<0.001). Overweight and obese participants (n=67) reported that their Twitter friends (M=1.58; SD=0.83) were less judgmental than their Facebook friends (M=2.46, SD=1.20; t(67)=−5.03, p<0.001), family (M=3.31, SD=1.44; t(76)=−9.00, p<0.001) and in-person friends (M=2.79, SD=1.31; t(76)=−7.07, p<0.001). Among overweight and obese participants who reported use of online social networks specific to weight loss (N=41), both negative social influence items differed by relationship category (feeling embarrassed, F(4)=34.98, p<0.001; judgmental, F(4)=22.14, p<0.001). Participants rated their friends on weight-specific online social networks (M=2.58, SD=1.19) lower in embarrassment about weight than their Facebook friends (M=3.60, SD=1.03; t(41)=−5.76, p<0.001), in-person friends (M=4.24, SD=0.77; t(44)=−8.99, p<0.001), family (M=4.11, SD=1.13; t(44)=−6.85, p<0.001) and Twitter friends (M=2.80, SD=1.27 vs M=2.58, SD=1.19; t(44)=−2.02, p=0.049). Participants also rated their friends on online weight loss social networks as less judgmental (M=1.83, SD=0.95) than their Facebook friends (M=2.35, SD=1.09; t(42)=−2.77, p=0.008), in-person friends (M=2.93, SD=1.32; t(45)=−4.63, p<0.001), and family (M=3.39, SD=1.36; t(45)=−6.94, p<0.001). No differences emerged between Twitter friends and friends on weight-specific online social networks (M=1.63, SD=0.83 vs M=1.83, SD=0.95, t(45)=1.42, p=0.16) on the judgmental item.

Social influence and weight loss

Higher positive social influence scores from Twitter and Facebook friends were significantly associated with greater weight loss in the current weight loss attempt (r=0.30, p=0.002; r=0.32, p=0.002, respectively). Positive social influence scores from in-person friends, family, and weight-specific online social networks were not significantly related to weight lost in the current attempt. Lower scores in embarrassment from in-person friends were associated with greater weight loss during the current attempt (r=−0.21, p=0.03). No significant relationships were observed between scores for embarrassment or judgment and weight lost in the current attempt for any of the other relationship categories.

Facilitators and barriers to discussing weight loss on online social networks

From 100 participants, a total of 121 responses were made for Twitter facilitators and they were distilled into nine themes, and 48 responses for barriers were distilled into seven themes ([table 2](#)). The themes for the most common facilitators were information sharing, support/encouragement, and community. The themes for the most common barriers were slow response to posts, lack of personal connection, social comparison, and too much information on the network. For Facebook, 38 responses were made for facilitators and distilled into eight themes, and 48 barrier responses were distilled into seven themes ([table 3](#)). The most common themes for facilitators were support/encouragement, information sharing, and finding close-tie friends who are also trying to lose weight. The most common themes for barriers included friends being perceived as judgmental, not caring, or the preference for friends to not know about the participant's weight loss. For online weight loss social networks, 45 responses were made for facilitators and distilled into four themes, and 21 barrier responses were distilled into five themes ([table 4](#)). The most common themes for facilitators included support/encouragement, community, and information sharing, and the most

Table 1 Characteristics of participants' use of Twitter and Facebook and weight loss online social networks

Characteristic	Twitter	Facebook	p Value*
Account duration (years)			0.42
<1	28%	1%	
1–3	52%	11%	
3+	20%	88%	
Log-in frequency			0.41
Several times/day	68%	20%	
Daily	24%	27%	
Less than daily	8%	53%	
Number of friends/followers, mean (SD)	494.44 (635.44)	399.38 (341.12)	0.20
% of friends/followers originating from an in-person relationship	15%	86%	<0.001
Major reason for use			
Stay in touch with family	10%	64%	0.01
Stay in touch with current friends	20%	74%	0.29
Reconnect with old friends	10%	54%	0.12
Make new friends	30%	8%	0.002

*Continuous data were analyzed via independent samples t tests, and categorical data via χ^2 .

Table 2 Facilitators and barriers to discussing weight on Twitter: percentage of responses, themes, and illustrative responses

Theme	Frequency	Illustrative responses
Like most about Twitter (n=121)		
Information sharing	30.6% (37)	'Learning and sharing tips, workout routines, recipes, and overall perception on various health and fitness topics'
Support/encouragement	19.8% (24)	'They seem to be the best source of immediate encouragement that I have'
Community	15.7% (19)	'They share the same goals and activities (running) as I do so they understand joys and frustrations. It's nice when others don't have a clue what I'm talking about.'
Motivation/inspiration	9.1% (11)	'The motivation from seeing others' workouts.'
Anonymity	9.1% (11)	'I feel like Twitter is somehow more anonymous than Facebook; I have less in real life followers, and tend to find more weight loss and career related contacts.'
Lack of judgment	7.4% (9)	'I don't feel judged—maybe because I can't see their reactions.'
Concise and rapid	4.9% (6)	'Its simple and short. To the point.'
Health challenges	3.3% (4)	'Personal trainers' monthly challenges.'
Like least about Twitter (n=47)		
Interactions too brief	25.5% (12)	'The support is somewhat inconsistent because it's such a fast-paced hit-or-miss type of social media. It is great for 140 characters of advice but not necessarily for involved conversations.'
Lack of personal connection/live too from the people I'm following	19.1% (9)	'I only wish we lived near each other in order to actually be workout/gym buddies.'
Social comparison	12.8% (6)	'The comparison trap!'
Too much information/can't read all the tweets of the people I'm following	12.8% (6)	'Sometimes I feel like I miss some important information if I'm not checking regularly.'
Misinformation/bad advice	10.6% (5)	'Some info is biased to support sales for what an individual or organization is soliciting'
Competitive/shallow/judgmental users	10.6% (5)	'Any sense of competitiveness'
Hard to find people with common interests	4.3% (2)	'It's hard to find like-minded people at the start'
Too 'cliquish'	4.2% (2)	'So much content it's hard to get through, sometimes the community can be cliquish, trends takeover, making you doubt your methods'

common themes for barriers included networks being impersonal, too many posts, and too much misinformation.

DISCUSSION

Adults who discuss their weight loss on Twitter report greater positive social influence and less negative social influence from Twitter friends compared with their in-person social networks (family and friends) and their Facebook friends. Although only 15% of their relationships on Twitter originated from an in-person relationship, Twitter was the source of the greatest positive social influence regarding weight loss. Greater positive

social influence from both Twitter and Facebook were associated with greater weight loss in their current attempt, while positive social influence from in-person friends and family was not associated with greater weight loss. One explanation for these findings may be that people who do not receive sufficient weight loss social support from in-person friends and family seek it out on online social networks. Given that our participants reported losing a fairly substantial amount of weight in their current weight loss attempt, future research should explore whether highly successful people are disproportionately attracted to online social networks and whether online social networks have

Table 3 Facilitators and barriers to discussing weight on Facebook: percentage of responses, themes, and illustrative responses

Theme	Frequency	Illustrative responses
Like most about Facebook (n=38)		
Support/encouragement	37% (14)	'Support I get from them and encouragement to keep going.'
Find in-person friends with weight struggles	26.7% (10)	'Great way to build your own personal community with others in your circle of friends who are facing similar goals.'
Information sharing	26.7% (10)	'Sharing what I find to be useful information.'
Picture sharing	10.5 (4)	'I enjoy when I post a picture and friends & family comment on how much different and healthier I look.'
Like least about Facebook (n=48)		
Facebook friends are judgmental	33.3% (16)	'Can sometimes feel as if people are being judgmental.'
Facebook friends don't care/think I'm bragging	22.9% (11)	'People don't want to hear about it if they are not doing it. They say it come across like I'm bragging when I say I lost 5 pounds or I ran 8 miles'
Don't want my Facebook friends knowing	20.8% (10)	'Everything—my friends and acquaintances on Facebook don't need to know every health-related move I make.'
Misinformation/bad advice/bad role models	10.4% (5)	'Nobody there knows anything about weight loss, in my circles anyway. Also, so much false info about what is bad for you, urban legends, shine things are opinion and some are just dangerously wrong. Facebook is a haven of mis-information and overzealous drama.'
Social comparison (I compare myself to others)	8.3% (4)	'I sometimes feel like I am not doing enough compared to others'
Privacy concerns	4.2% (2)	'Don't like the Facebook format. Don't trust the site -don't know how it really works'

Table 4 Facilitators and barriers to discussing weight on online weight loss social networks: percentage of responses, themes, and illustrative responses

Theme	Frequency	Illustrative responses
Like most about online weight loss communities (n=46)		
Support/encouragement	37.7% (18)	'I love the support, encouragement, motivating, tips, challenges, people who can truly relate.'
Community	31.1% (14)	'All there for the same reason with same goals'
Information sharing	31.1% (14)	'Learning and sharing tips, workout routines, recipes, and overall perception on various health and fitness topics.'
Like least about online weight loss communities (n=21)		
Impersonal	33.3% (7)	'Wish I had more face to face interaction'
Too many posts	23.8% (5)	'Hard to keep up with everyday.'
Misinformation/bad advice/bad role models	19.0% (4)	'Junk advice and promotion of products that are low calorie but still unhealthy'
Inconvenient	14.3% (3)	'I forget to use them. They aren't as convenient.'
Judgmental/social comparison	9.6% (2)	'The judgmental people and people who think they know everything about weight loss and think that everyone's body is like theirs.'

potential to enhance weight loss in people who do not naturally gravitate to them. One study found that adding an online social network to a podcast-delivered weight loss program did not enhance weight loss outcomes¹³; however, online social networks might be useful specifically for people who are lacking in social support for their weight loss.

Another possibility is that people who gravitate towards social media to discuss their weight loss attempt are more motivated to lose weight. Whether they began discussing their weight loss on online social networks before or after they lost weight is unknown. People who successfully lose weight may be more likely to discuss their weight loss attempt in public than those who are not successful. Our data suggest that people who talk about their weight loss attempt on Twitter perceive their Twitter friends as generally more supportive than their Facebook friends, thus the type of online social network appears to make a difference in the perceived benefits. One study reported that greater engagement in a weight loss online social network was associated with greater weight loss.¹⁴ Our finding that greater positive support experienced from Twitter and Facebook was associated with greater weight loss is consistent with that finding. One important research question is whether greater online social network engagement facilitates weight loss or is simply a characteristic of people who are more successful at weight loss. To the extent that it is the latter, the impact of engagement among people who are struggling to lose weight would depend on whether they find the chatter among successful weight losers inspiring or annoying. Some participants cited the tendency to compare themselves with others as a negative aspect of participating in Twitter.

Twitter and online weight loss communities allow people to connect with each other on the basis of a common interest. Our data showed that nearly 80% of the people in our sample reported that connecting with people who share common interests or hobbies was a major reason they used Twitter. Family members, in-person friends, and Facebook friends do not necessarily share an interest in losing weight and therefore may not always be the ideal source of social support during a weight loss attempt. Family and close friends in particular may also be directly affected by the individual's efforts to lose weight such as when an individual attempting to lose weight no longer engages in unhealthy eating and activity patterns with friends or family members, which could affect their tendency to support their loved one. Sabotage and undermining behaviors in which family members and/or friends intentionally or unintentionally thwart

a loved one's weight loss attempt have been documented.^{18 19} People in online social networks who are not connected outside of the social network may have less stake in each other's lives and thus less opportunity and/or motivation to undermine or sabotage each other. Twitter and online weight loss communities may also be more conducive to severing ties with negative influences without social consequence. On Twitter, for example, one can click a button to 'unfollow' someone to end the relationship, whereas confronting an unsupportive in-person friend or family member or severing the connection may be more difficult and accompanied by social consequences, which may ultimately deter that severing from taking place. As such, negative influences may tend to linger in in-person social networks.

The fear of failure in a weight loss attempt may also discourage people from seeking support from family or friends. Several participants cited anonymity as a feature they liked about online social networks such as Twitter and weight loss communities. Anonymity may allow members to feel more comfortable sharing sensitive information, talking freely, and allow members to discuss problems they are having with in-person friends and family members.¹⁰ Failure does not have to be revealed on a social network and therefore the associated embarrassment and shame is more easily avoided. That family members, in-person friends, and Facebook friends were so similar in ratings of positive and negative social influence is not surprising given that participants said that, on average, 86% of Facebook friends originated from in-person relationships.

The most common themes mentioned regarding the benefits of discussing weight loss on Twitter, Facebook, and online weight loss social networks were the same and included support/encouragement, information sharing, and community. People may seek online social networks to meet these needs during their weight loss attempt. A study of a social network intervention in cancer survivors showed that those with the highest level of participation reported less social support from family and in-person friends.²⁰ The barriers to discussing weight loss on the three social networks were not as similar. Participants discussing their weight loss attempt on Twitter and online weight loss social networks seemed to crave closer connections and more interaction, while those discussing their weight loss on Facebook often expressed that their friends were judgmental or not interested. Participants seemed most positive about connecting with others who were also attempting to lose weight regardless of the online social network; however, Twitter and online weight loss social networks seemed more conducive

to this than Facebook. The advantage of in-person ties is that they provide more intimate support, but the disadvantage according to our data is that they may be judgmental about weight and cause embarrassment which may undermine the potential for effective social support. These findings are consistent with those of Puhl and Brownell,²¹ who found that obese adults cite their family as the most common source of weight stigmatizing behavior—more so than friends, coworkers, and other social connections.

Limitations

The present study has several notable limitations. First, it is not possible to systematically expose all Twitter users to our study advertisement, which resulted in a convenience sample. Those who are most active on Twitter and those interested in the accounts of our investigators who distributed the study advertisements (ie, an obesity researcher and a weight loss blogger) would be most likely to see the advertisements. Further research is needed to explore recruitment strategies using online social networks.^{22–23} Finally, we did not use a standardized measure of positive and negative social influence for online and in-person relationships. Given the increasing use of online social networks, research is needed to develop measures of social influence in online relationships. The current study does not provide information on why people choose not to tweet about their weight, or why someone might stop tweeting about a weight loss attempt. Future research should explore these questions.

Conclusions

Results of the present study show that relationships formed online may be valuable sources of positive social support for weight loss and that in-person relationships may be a greater source of negative influence than online relationships. Findings may have implications for assisting patients who are socially isolated. Online social networks have the potential to overcome geographical, social class, and other barriers to interpersonal interactions, giving them vast potential for reach and impact. As described by Loss *et al*,²⁴ given that so much occupational and leisure time is now spent online, online social networks are gaining importance as a ‘setting’ by which to intervene in health behaviors.²⁴ Research is needed to determine whether healthcare interventions can and should be performed via open public networks or via supervised private networks.³ Enhancing the patient’s ability to connect with other patients may have implications for improved social support, adherence, clinical outcomes, and ultimately healthcare costs. Research on the benefits of online social networking, how to facilitate productive social interactions, the possible role of providers, and whether online social networks can be leveraged within the healthcare system is needed to explore this potential.

Contributors SP, KLS, and ME conceived the design, performed analyses, interpreted the data, drafted and revised the content, and approved the final manuscript. SP and ME also made substantial contributions to data acquisition. MZ made substantial contributions to the acquisition of data and revising the drafts, and approved the final manuscript. MEW was involved in design, interpretation of data, revising drafts, and approval of final manuscript. BA, MCW, ME, AMB, and HT

made substantial contributions to the design, interpretation of the data, and revising drafts, and approved the final manuscript.

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Ethics approval UMass Human Studies Committee.

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